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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,625	10/02/2003	Peter Jahn	Bayer 10265-WCG	9802
27386	7590	03/07/2006	EXAMINER	
NORRIS, MCLAUGHLIN & MARCUS, P.A. 875 THIRD AVE 18TH FLOOR NEW YORK, NY 10022			LEO, LEONARD R	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,625

Applicant(s)

JAHN ET AL.

Examiner

Leonard R. Leo

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on December 21, 2005 has been entered. Claims 1-18 are pending.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. *Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading.* If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

Claims 14-18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The recitation of "even without [a] holed sheet" does not further limit the claim. Claim 1 from which the claims depend, recites a holed sheet. Omitting the previously recited structure does not further limit the claim and is improper.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the surface" in line 3. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether structure is referring to the bottom of the depression or top plane of the sheet.

A ratio of the depression width at the surface of the sheet to center-to-center distance between two adjacent depressions is always less than 1.0, since the pitch will always be greater than any width distance in a trapezoidal depression.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bae et al in view of Wennerberg.

Bae et al discloses all the claimed limitations except a holed sheet between the top and bottom sheets.

Wennerberg discloses a heat exchanger comprising a pair of sheets 1 having depressions 3 and a holed sheet 9 there between for the purpose of increasing turbulence to improve heat exchange (column 1, lines 44-49 and column 3, lines 15-17).

Since Bae et al and Wennerberg are both from the same field of endeavor and/or analogous art, the purpose disclosed by Wennerberg would have been recognized in the pertinent art of Bae et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Bae et al a holed sheet for the purpose of increasing turbulence to improve heat exchange as recognized by Wennerberg.

The recitations of “worked into the sheet in a material-removing and/or material-displacing manner” in claim 1 and “by material stripping or material displacement” in claim 4 are considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

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Regarding claim 2, Bae et al discloses headers 14, 16 having a larger area than the ducts 12.

Regarding claims 4 and 9-10, as gleaned from the drawings, Bae et al discloses the ratio of the depression depth to sheet thickness of about 75%. One of ordinary skill in the art would employ any desired ratio to achieve a desired pressure drop and heat exchange, or pressure strength and weight.

Regarding claim 6, Bae et al meets the claim limitation, since the pitch is always greater than any intermediate width.

Regarding claim 7, as gleaned from the drawings, Bae et al discloses the ratio of the width to center-to-center distance of about 80%.

Regarding claim 8, Figure 2 of Bae et al meets the claim limitation.

Regarding claims 11-12, Bae et al (column 2, lines 21-23) discloses the angle is from 20 to 45°.

Regarding claims 13-18, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bae et al in view of Wennerberg as applied to claims 1-4 and 6-18 above, and further in view of Guntly et al.

The combined teachings of Bae et al and Wennerberg lacks a specific sheet thickness. Bae et al discloses typical heat exchangers have tubes with a hydraulic diameter of less than 0.07 inch or less. Guntly et al is cited in Bae et al as such as device.

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Guntly et al discloses a heat exchanger comprising a thermal duct 20 having a tube thickness of 0.075 inch (1.9 mm) for the purpose of minimizing the airside pressure drop.

Since Bae et al and Guntly et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Guntly et al would have been recognized in the pertinent art of Bae et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Bae et al a tube thickness of 0.075 inch (1.9 mm) for the purpose of minimizing the airside pressure drop as recognized by Guntly et al.

Response to Arguments

The objection to the drawings under 37 CFR 1.83(a) is withdrawn in view of the new Figure 10.

The objection to claim 7 is withdrawn in view of the amendment.

Applicant's arguments have been fully considered but they are not persuasive.

As emphasized above and repeated below, section headings are ***not present*** in the originally filed specification. Correction is necessary.

“As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. ***Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading.*** If no text follows the section heading, the phrase “Not Applicable” should follow the section heading”

The objection of claims 14-18 under 37 CFR 1.75(c) is maintained. A claim that refers to a preceding claim is a dependent claim. In this instance, claims 14-18 refer to claim 1 and are dependent on claim 1. While the claims seek to recite a different statutory class of invention, the claims are still dependent claims.

The rejection of claims 6-7 under 35 U.S.C. 112, second paragraph is maintained. The claimed “sheet” has two surfaces: one with grooved depressions and the other presumably planar. Thus, the recitation of “the surface” in claim 6 is believed unclear. Simple clarification to the claims is reasonable request.

Applicants’ remarks with respect to Bae et al are not well taken. There is no structural difference between the “plates” of Bae et al and the “sheets” in the instant invention. The “ridges” of Bae et al define grooved depressions, and the “grooved depressions” of the instant invention are defined by ridges. It appears to be a classic story of whether the glass is half empty or half full. In the instant amendment, it appears applicant is attempting to distinguish the claimed invention in a product-by-process manner. However, in the final product, the process limitations are given no patentable weight. See MPEP 2113. The planar plate of Bae et al is a structural equivalent of the planar sheet of the instant invention, regardless of how they are manufactured. Figure 2 of Bae et al and applicants’ Figure 2 disclose the same structure, i.e. overlapping and intersecting grooved depressions and ridges.

The Examiner agrees the device of the combined teachings of Bae et al and Wennerberg would produce a holed sheet disposed between two plates that would “rest on the edges of the ridges.” The claims do not recite where or how the “holed sheet” is disposed in relation to the planar sheets. On the contrary, one of ordinary skill in the art would employ the holed sheet of Wennerberg, as noted by column and line number, in the device of Bae et al to improve heat exchange. This is the exact same reason of applicants’ holed sheet.

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The rejection in view of Guntly et al teaching a specific hydraulic diameter to improve heat exchange was not traversed by applicants. Instead, applicants state Guntly et al does not cure the alleged deficiencies of Bae et al and Wennerberg.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3753

March 1, 2006